



General

Guideline Title

Cataract in the adult eye.

Bibliographic Source(s)

American Academy of Ophthalmology Cataract and Anterior Segment Panel. Cataract in the adult eye. San Francisco (CA): American Academy of Ophthalmology (AAO); 2011. 89 p. [855 references]

Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Cataract in the adult eye. Preferred practice pattern. In: American Academy of Ophthalmology (AAO). San Francisco (CA): American Academy of Ophthalmology (AAO); 2006. p. 69. [585 references]

All Preferred Practice Patterns are reviewed by their parent panel annually or earlier if developments warrant and updated accordingly. To ensure that all Preferred Practice Patterns are current, each is valid for 5 years from the "approved by" date unless superseded by a revision.

Recommendations

Major Recommendations

Ratings of the strength of the recommendations (Strong, Discretionary) and quality of evidence (Good, Moderate, Insufficient) are defined at the end of the "Major Recommendations" field.

Cataract is a progressive, chronic, age-related disease affecting a large number of people over the age of 50. Cataract surgery is one of the most highly successful treatments in the history of medicine. Without surgery, patients would experience steady decline in visual and physical function. With surgery, patients rapidly recover with excellent vision and the ability to resume regular activities of daily living. The planning and decision-making process for cataract surgery is complex and intricate, involving not only judgment about appropriate treatment and surgical techniques but also about antibiotic, prophylaxis, device selection (intraocular lenses [IOLs], ophthalmic viscosurgical devices [OVDs]), and prevention of complications. Continued innovation in surgical technique, IOLs, and antibiotic prophylaxis has improved safety and efficacy. The following list highlights important findings and recommendations for care from this comprehensive revision of the PPP.

1. *Cataract surgery should be recommended when indicated because of proven effectiveness in enhancing quality of life. (Strong Recommendation, Moderate Evidence)*

Numerous studies have documented that cataract extraction can markedly improve a patient's activities of daily living. These activities may include basic functions such as walking, driving, maintaining an occupation, and caring for personal needs; they may also extend to hobbies, enabling participation in social and community activities, and the reduction of ocular imbalance and troublesome refractive states. Scientific

literature further provides support for a decreased risk of injury from falls and automobile accidents, improved mental health, and a general sense of well-being following cataract surgery. Such improvements in overall quality of life cannot be predicted or judged solely by single measures of visual function such as Snellen acuity, because problems with glare, contrast sensitivity, color perception, aberration, and binocularity directly impact a patient's level of visual impairment.

2. *Cataract surgery should be recommended when indicated because of its cost-effectiveness in relation to other accepted treatments. (Strong Recommendation, Moderate Evidence)*

The medical advances in cataract surgery from the late 1960s to present have resulted in increased safety and improved outcomes. One estimate of the present benefit value of cataract surgery is \$95,000, which is far greater than the cost of treatment at \$2300 to \$3000. This value compares favorably with the estimated present values for other treatments: \$20,000 for breast cancer, \$6000 for depression, \$240,000 for a low-birthweight infant, and \$70,000 for a heart attack. These various analyses demonstrate that on a relative basis, cataract surgery is very cost-effective and beneficial for the patient and society.

3. *The decision to recommend cataract surgery should be based on consideration of the following factors: visual acuity, visual impairment, and potential for functional benefits. (Strong Recommendation, Good Evidence)*

There is no single test or measure that adequately describes the effect of a cataract on a patient's visual status or functional ability. Therefore, no single test can properly define the threshold for performing cataract surgery. Though various methods of acuity measurement have long been considered the primary determinant for surgical appropriateness, the decision to recommend cataract surgery should not be made solely on this basis. For example, surgery for nonadvanced cataract in symptomatic patients with relatively good Snellen visual acuity often provides significant functional benefits. Standardized evaluation of impairment of visual function and activities of daily living has been shown to correlate with expected improvement and satisfaction after cataract surgery. Several of these validated testing instruments and recent modifications are available for clinical use.

4. *Cataract surgery is a procedure appropriately utilized in the United States. (Strong Recommendation, Moderate Evidence)*

Cataract extraction ranks among the most commonly performed surgical interventions in the United States. Assessment of appropriateness is therefore of particular interest and importance. Several studies of cataract surgery in the United States have shown utilization to be appropriate in the majority of cases evaluated. The primary indication for surgery is visual function that no longer meets the patient's needs, and for which cataract surgery provides a reasonable likelihood of improved vision. Preoperative evaluation to identify appropriate candidates should include thorough ophthalmic examination, patient-centered visual function evaluation, and patient education about treatment options prior to consent for surgery.

5. *Ophthalmologists and other physicians managing patients taking alpha-antagonists should be aware of the risks of intraoperative floppy iris syndrome (IFIS). (Strong Recommendation, Good Evidence)*

Intraoperative floppy iris syndrome is associated with a higher rate of surgical complications, particularly when it is not recognized or anticipated. Pupil stretching and sphincterotomies are ineffective in these eyes, and pharmacologic approaches, such as intracameral epinephrine, viscomydriasis, and pupil expansion devices, either alone or in combination, should be used to manage IFIS. Patients should be questioned about current or prior use of alpha-antagonists in general and tamsulosin in particular. The risk of IFIS is greater with tamsulosin than with nonselective alpha-antagonists.

6. *The intraocular pressure (IOP) lowering effect of cataract surgery should be considered in the overall management of the patient. (Strong Recommendation, Moderate Evidence)*

Phacoemulsification cataract surgery alone has been shown to reduce IOP in patients without glaucoma. It also has been shown to be of benefit in lowering IOP in patients with angle-closure glaucoma. In patients with open-angle glaucoma, the IOP lowering associated with phacoemulsification cataract surgery alone may be of limited benefit.

7. *Ophthalmologists should be aware of increased antibiotic resistance in the general population. (Strong Recommendation, Moderate Evidence)*

While staphylococcal species have been shown to be the most common organism cultured from cases of postoperative infectious endophthalmitis, increasing resistance of these organisms to commonly used antibiotics is a major concern today. What started as penicillin resistance has progressed over time to common resistance for many antibiotics, including all of the presently used fluoroquinolones. These multidrug resistant bacteria have become so common that they are now present in the majority of patients who come for routine cataract surgery in many regions of the United States today.

8. *The optimum dosing and route of administration of antibiotics should be considered in order to achieve a high intraocular concentration immediately following surgery. (Strong Recommendation, Moderate Evidence)*

With bacterial resistance an ever growing problem, it is becoming increasingly important to ensure that high concentrations of currently available antibiotics are present inside the eye, where a bacterial inoculum might reside. Although topical antibiotics may reach intraocular

therapeutic levels for many bacteria, only intracameral antibiotics at the end of the case guarantees suprathreshold antibiotic levels for an extended period of time. Evidence that this approach is efficacious is growing. Topical antibiotic eyedrops can be additive to intracameral antibiotics; however, if used alone they should be given frequently the day of surgery and not held until the next day. There is less evidence that subconjunctival antibiotics are equally efficacious when compared with topical and intracameral antibiotics.

9. *Although the incidence is rare, ophthalmologists should be aware of the potential risk of toxic anterior segment syndrome (TASS). (Strong Recommendation, Moderate Evidence)*

In one large series of 26,408 consecutive cataract surgeries, the incidence of TASS was 0.22%. An evaluation of common risk factors associated with TASS looked at submitted TASS questionnaires and results from site visits from 2006 through 2009. The most common factors associated with TASS were related to inadequate cleaning and sterilization of ophthalmic instruments, such as insufficient flushing of phacoemulsification and irrigation/aspiration handpieces, as well as the use of enzymatic cleaners, detergents, and ultrasound baths.

10. *Absent a normal capsular bag, ophthalmologists should determine whether the power and design of an IOL intended for capsular bag fixation is or is not appropriate for ciliary sulcus placement. (Strong Recommendation, Moderate Evidence)*

Optimal characteristics of a sulcus-fixated posterior chamber intraocular lens include sufficient overall length, posterior haptic angulation, and the absence of sharp anterior optic edges. Intraocular lenses, such as single-piece acrylic designs that are intended solely for the capsular bag, should not be placed in the ciliary sulcus because they have been associated with pigment dispersion, elevated IOP, intraocular hemorrhage, and cystoid macular edema. Backup IOLs in appropriate powers, sizes, and designs should be available for every cataract procedure. Anticipating a more anterior location of the optic, the power of an IOL placed in the ciliary sulcus should be reduced relative to that calculated for the same IOL when placed in the capsular bag (but less so when capture of the optic posterior to the capsulorrhexis can be achieved). Optic capture also reduces reliance on adequate haptic length to provide optic centration and stability. Because noncapsular bag fixation may increase the potential for optic tilt and decentration, the surgeon should reconsider whether multifocal IOLs or those with higher degrees of negative spherical aberration should be implanted.

11. *Safety protocols should be in place to prevent the occurrence of wrong-site surgery. (Strong Recommendation, Moderate Evidence)*

Steps taken before the surgery day, on the day of surgery, and when procedures dependent on preoperative calculation are undertaken can minimize the incidence of preventable surgical errors such as surgical site (e.g., wrong eye) and surgical procedure (e.g., wrong IOL implant). The Wrong-Site Wrong-IOL Checklist (see Appendix 3 in the original guideline document) is an example of how to document in the surgery chart that all the appropriate steps have been taken in preventing wrong-site and wrong-surgery events.

Definitions:

Strength of Recommendation

Strong Recommendation - Used when the desirable effects of an intervention clearly outweigh the undesirable effects or clearly do not

Discretionary Recommendation - Used when the trade-offs are less certain—either because of low-quality evidence or because evidence suggests that desirable and undesirable effects are closely balanced

Body of Evidence Quality Ratings

Good Quality - Further research is very unlikely to change confidence in the estimate of effect.

Moderate Quality - Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate.

Insufficient Quality - Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate; any estimate of effect is very uncertain.

Clinical Algorithm(s)

None provided

Scope

Disease/Condition(s)

Guideline Category

Diagnosis

Evaluation

Management

Treatment

Clinical Specialty

Ophthalmology

Surgery

Intended Users

Health Plans

Physicians

Guideline Objective(s)

- To identify the presence and characteristics of cataract
- To assess the impact of the cataract on the patient's visual and functional status and on quality of life
- To educate the patient about the impact of a cataract on vision, functional activity and natural history, as well as the benefits and risks of surgical and other alternatives so that the patient can make an informed decision about treatment options
- To establish criteria for a successful treatment outcome with the patient
- To perform cataract surgery when there is the expectation that it will benefit the patient's function and when the patient elects this option
- To perform surgery when indicated for management of coexistent ocular disease
- To provide necessary postoperative care, rehabilitation, and treatment of any complications

Target Population

Adults (18 years and older) with cataracts

Interventions and Practices Considered

1. Diagnosis by evaluation of visual impairment, ophthalmic evaluation, and supplemental preoperative ophthalmic testing
2. Nonsurgical management, such as educating patients about the benefits of smoking cessation, use of ultraviolet (UV) B blocking sunglasses, prescribing new eyeglasses where appropriate
3. Surgical management of cataracts, including: selection of appropriate candidates for surgery; preoperative medical evaluation; patient counseling regarding costs, risks, benefits, expected outcomes of surgery and care planning; discussion of anesthesia techniques and effects with patient; infection prophylaxis (5% solution of povidone iodine); use of cataract surgery checklist to minimize surgical errors; selection of appropriate surgical technique (small-incision surgery preferred); intraocular lens implantation; postoperative care, such as managing complications, discharge, medications, follow-up and examination, counseling and referral
4. Surgical management, as indicated, for co-existent ocular disease
5. Neodymium:yttrium-aluminum garnet (Nd:YAG) laser capsulotomy for management of post-capsular opacification (PCO)

Major Outcomes Considered

- Risk factors of cataract development
- Improvement in visual function
- Reduction in visual symptoms
- Refractive outcome
- Improvement in the physical function, mental health, and quality of life
- Utilization of cataract surgery
- Complications associated with cataract surgery

Methodology

Methods Used to Collect/Select the Evidence

Searches of Electronic Databases

Description of Methods Used to Collect/Select the Evidence

Literature searches to update the Preferred Practice Patterns were undertaken in February 2010 in PubMed and the Cochrane Library. Additional searches were undertaken in March 2010; searches were last updated in January 2011. Complete details of the literature search are available at www.aao.org/ppp .

Number of Source Documents

Not stated

Methods Used to Assess the Quality and Strength of the Evidence

Weighting According to a Rating Scheme (Scheme Given)

Rating Scheme for the Strength of the Evidence

Levels of Evidence to Rate Individual Studies

I++ High-quality meta-analyses, systematic reviews of randomized controlled trials (RCTs), or RCTs with a very low risk of bias

I+ Well-conducted meta-analyses, systematic reviews of RCTs, or RCTs with a low risk of bias

I- Meta-analyses, systematic reviews of RCTs, or RCTs with a high risk of bias

II++ High-quality systematic reviews of case-control or cohort studies

High-quality case-control or cohort studies with a very low risk of confounding or bias and a high probability that the relationship is causal

II+ Well-conducted case-control or cohort studies with a low risk of confounding or bias and a moderate probability that the relationship is causal

II- Case-control or cohort studies with a high risk of confounding or bias and a significant risk that the relationship is not causal

III Nonanalytic studies (e.g., case reports, case series)

Body of Evidence Quality Ratings*

Good quality - Further research is very unlikely to change confidence in the estimate of effect.

Moderate quality - Further research is likely to have an important impact on confidence in the estimate of effect and may change the estimate.

Insufficient quality - Further research is very likely to have an important impact on confidence in the estimate of effect and is likely to change the estimate; any estimate of effect is very uncertain.

*Defined by Grading of Recommendations Assessment, Development and Evaluation (GRADE)

Methods Used to Analyze the Evidence

Systematic Review

Description of the Methods Used to Analyze the Evidence

All studies used to form a recommendation for care are graded for strength of evidence individually, and that grade is listed with the study citation in the original guideline document.

To rate individual studies, a scale based on Scottish Intercollegiate Guideline Network (SIGN) is used. The definitions and levels of evidence to rate individual studies are listed in the "Rating Scheme for the Strength of the Evidence" field.

Methods Used to Formulate the Recommendations

Expert Consensus

Description of Methods Used to Formulate the Recommendations

The Cataract and Anterior Segment Preferred Practice Pattern® (PPP) Panel members wrote the Cataract in the Adult Eye Preferred Practice Pattern. The Cataract and Anterior Segment Preferred Practice Pattern® Consulting Work Group members drafted certain sections of the document, which the Panel members reviewed and approved. Over the course of two years, the PPP Panel members discussed and reviewed successive drafts of the document, meeting in person three times in that period and conducting other review by e-mail discussion, to develop a consensus over the final version of the document.

Rating Scheme for the Strength of the Recommendations

Key recommendations for care are defined by Grading of Recommendations Assessment, Development and Evaluation (GRADE) as follows:

Strong recommendation Used when the desirable effects of an intervention clearly outweigh the undesirable effects or clearly do not

Discretionary recommendation Used when the trade-offs are less certain—either because of low-quality evidence or because evidence suggests that desirable and undesirable effects are closely balanced

Cost Analysis

Cost-effectiveness of Cataract Surgery

Methods to evaluate whether the cost of a medical intervention is a good use of available resources include cost-effectiveness or cost-utility calculations. The quality-adjusted life year (QALY) is a measure of a disease burden, including both the quality and the quantity of life lived. It is used in assessing the monetary value of a medical intervention. The QALY is based on the number of years of life that would be added by the intervention. Each year in perfect health is assigned the value of 1.0 down to a value of 0.0 for death. If the extra years would not be lived in full health, for example, if the patient would be blind, lose a limb, or have to use a wheelchair, then the extra life-years are given a value between 0 and 1 to account for this. The QALY is used in cost-utility analysis to calculate the ratio of cost to QALY improvement and compare the value of interventions of different health conditions. Lower cost per QALY represents a more cost-effective medical intervention.

Estimates of the hypothetical cost per QALY gained for cataract surgery in one eye was estimated at US\$4500 and US\$2023 in the United

States. In a U.S. study done in 2003, the estimated cost per QALY gained for cataract surgery in the second eye was US\$2727. These calculations compare favorably with other medical treatments. Single-vessel coronary artery bypass surgery for disease of the left anterior descending artery costs \$7000/QALY, treatment of arterial hypertension costs \$58,000/QALY, and ambulatory peritoneal dialysis costs \$90,000/QALY.

Medical technology is valuable if the benefits of medical advances exceed the costs. Technological advances in treatment of five conditions, including cataracts, were analyzed in one study. In four of the conditions—heart attacks, low-birthweight infants, depression, and cataracts—the estimated benefit of technological changes is much greater than the cost. The medical advances in cataract surgery from the late 1960s to present have resulted in increased safety and improved outcomes. One estimate of the present benefit value of cataract surgery is \$95,000, which is far greater than the cost of treatment at \$2300 to \$3000. This value compares favorably with the estimated present values for other treatments: \$20,000 for breast cancer, \$6000 for depression, \$240,000 for a low birthweight infant, and \$70,000 for a heart attack. These various analyses suggest that on a relative basis, cataract surgery is very cost-effective and beneficial for the patient and society.

Method of Guideline Validation

External Peer Review

Internal Peer Review

Description of Method of Guideline Validation

The Cataract and Anterior Segment Preferred Practice Pattern® Review Panel members were responsible for reviewing the document specifically for any evidence of bias from relationships with companies of the Writing Panel or Work Group members. These panel members were selected for their expertise, objectivity, and lack of relationships with companies related to the subject of the document. This procedure was undertaken to comply with the Council of Medical Specialty Societies' Code for Interactions with Companies because work on the Preferred Practice Pattern started in October 2009, before the Academy adopted the Code. Overall, the guideline development process for this Preferred Practice Pattern is in compliance with the Council of Medical Specialty Societies' Code.

The Preferred Practice Patterns Committee members reviewed and discussed the document during a meeting in May 2011. The document was edited in response to the discussion and comments.

The Cataract in the Adult Eye Preferred Practice Pattern was then sent for review to additional internal and external groups and individuals in July 2011. All those returning comments were required to provide disclosure of relevant relationships with industry to have their comments considered. Members of the Cataract and Anterior Segment Preferred Practice Pattern Panel reviewed and discussed these comments and determined revisions to the document.

These guidelines were approved by the Board of Trustees of the American Academy of Ophthalmology (September 17, 2011).

Evidence Supporting the Recommendations

Type of Evidence Supporting the Recommendations

The type of supporting evidence is identified and graded for each recommendation (see the "Major Recommendations" field).

Benefits/Harms of Implementing the Guideline Recommendations

Potential Benefits

- Improved visual function as a result of cataract surgery
- Improved physical function as a critical outcome of cataract surgery
- Improved mental health and emotional well-being as a second critical outcome of cataract surgery

Potential Harms

- *Cataract surgery*: Rare major complications that are potentially sight-threatening include infectious endophthalmitis, toxic anterior segment syndrome (TASS), intraoperative suprachoroidal hemorrhage, cystoid macular edema (CME), retinal detachment, persistent corneal edema, and intraocular lens (IOL) dislocation. Incision, iris and/or corneal complications; prolonged inflammation; tears or ruptures; retained lens fragments; suprachoroidal hemorrhage; intraocular pressure (IOP) elevation or pain can also occur.
- *Intraocular lenses (IOL)*: The most common reasons for explantation of foldable IOLs are dislocation or decentration, glare or optical aberrations, incorrect power, and opacification (or calcification). Intraocular lenses may also be damaged during implantation, and it may be necessary for the surgeon to consider intraoperative lens implant exchange. Implantation of single-piece acrylic IOLs in the ciliary sulcus are associated with pigment dispersion, iris transillumination defects, elevated IOP, and recurrent inflammation or hemorrhage. Malpositioned anterior chamber IOLs may result from improper sizing, iris tuck following implantation, or rotation of a haptic through a peripheral iridectomy. Excessive anterior chamber IOL mobility can lead to corneal endothelial decompensation. Plate haptic silicone IOLs can dislocate posteriorly following neodymiumyttrium-aluminum garnet (Nd:YAG) capsulotomy and, rarely, spontaneously from capsular contraction.
- *Anesthesia*: Anesthesia techniques with needle injection may be associated with complications such as strabismus, globe perforation, retrobulbar hemorrhage, and macular infarction not seen with topical, blunt cannula, and other non-needle injection techniques. Excessive use of intravenous (IV) sedatives during cataract surgery was associated with increased risk of an adverse intraoperative medical event and was an even greater risk when both IV opiates and sedatives were used.
- *Nd:YAG laser*: Complications of Nd:YAG laser capsulotomy include transient and long-term increased IOP, retinal detachment, CME, damage to the IOL, hyphema, dislocation of the IOL, and corneal edema and corneal abrasions from using a focusing contact lens for the laser surgery. Axial myopia increases the risk of retinal detachment after Nd:YAG laser capsulotomy, as does pre-existing vitreoretinal disease, male gender, young age, vitreous prolapse into the anterior chamber, and spontaneous extension of the capsulotomy. More recently, opacification of silicone IOL optics due to calcium deposits following Nd:YAG capsulotomy in eyes with asteroid hyalosis has been reported.
- *Ocular comorbidities*: Preoperative ocular comorbidities have a significant effect on the outcome of cataract surgery. Special considerations for patients with comorbid conditions can be found in Table 3 in the original guideline document. High-risk characteristics include a history of previous eye surgery, special types of cataracts, very large and very small eyes, deeply set eyes, eyes with small pupils or posterior synechiae, eyes with scarred or cloudy corneas, eyes with weak or absent zonules, prior ocular trauma, and the systemic use of alpha-1a antagonists, which increases the risk of intraoperative floppy iris syndrome (IFIS). See Table 4 in the original guideline document.
- *Systemic comorbidities*: Systemic comorbidities that may be of importance intraoperatively are diabetes mellitus, pulmonary dysfunction, cardiovascular dysfunction (e.g., poorly controlled blood pressure, poorly controlled heart failure), musculoskeletal disorders causing positional difficulties, tremor, severe hearing impairment, anxiety disorders, mental retardation, dementia, and coagulopathies.

Contraindications

Contraindications

Surgery for a visually impairing cataract should not be performed under the following circumstances:

- Tolerable refractive correction provides vision that meets the patient's needs and desires.
- Surgery is not expected to improve visual function, and no other indication for lens removal exists.
- The patient cannot safely undergo surgery because of coexisting medical or ocular conditions.
- Appropriate postoperative care cannot be arranged.
- The patient or patient's surrogate decision maker is unable to give informed consent for nonemergent surgery.

The American Urological Association guidelines for the management of benign prostatic hyperplasia recommend that men with planned cataract surgery avoid the initiation of alpha-1 antagonists until their cataract surgery is completed.

Qualifying Statements

Qualifying Statements

- Preferred Practice Patterns provide guidance for the pattern of practice, not for the care of a particular individual. While they should generally meet the needs of most patients, they cannot possibly best meet the needs of all patients. Adherence to these Preferred Practice Patterns will not ensure a successful outcome in every situation. These practice patterns should not be deemed inclusive of all proper methods of care or exclusive of other methods of care reasonably directed at obtaining the best results. It may be necessary to approach different patients' needs in different ways. The physician must make the ultimate judgment about the propriety of the care of a particular patient in light of all of the circumstances presented by that patient. The American Academy of Ophthalmology is available to assist members in resolving ethical dilemmas that arise in the course of ophthalmic practice.
- Preferred Practice Patterns are not medical standards to be adhered to in all individual situations. The Academy specifically disclaims any and all liability for injury or other damages of any kind, from negligence or otherwise, for any and all claims that may arise out of the use of any recommendations or other information contained herein.
- References to certain drugs, instruments, and other products are made for illustrative purposes only and are not intended to constitute an endorsement of such. Such material may include information on applications that are not considered community standard, that reflect indications not included in approved U. S. Food and Drug Administration (FDA) labeling, or that are approved for use only in restricted research settings. The FDA has stated that it is the responsibility of the physician to determine the FDA status of each drug or device he or she wishes to use, and to use them with appropriate patient consent in compliance with applicable law.

Implementation of the Guideline

Description of Implementation Strategy

An implementation strategy was not provided.

Implementation Tools

Chart Documentation/Checklists/Forms

Foreign Language Translations

Patient Resources

Quick Reference Guides/Physician Guides

Resources

For information about availability, see the *Availability of Companion Documents* and *Patient Resources* fields below.

Institute of Medicine (IOM) National Healthcare Quality Report Categories

IOM Care Need

Getting Better

IOM Domain

Effectiveness

Patient-centeredness

Safety

Identifying Information and Availability

Bibliographic Source(s)

American Academy of Ophthalmology Cataract and Anterior Segment Panel. Cataract in the adult eye. San Francisco (CA): American Academy of Ophthalmology (AAO); 2011. 89 p. [855 references]

Adaptation

Not applicable: The guideline was not adapted from another source.

Date Released

1996 Sep (revised 2011 Sep)

Guideline Developer(s)

American Academy of Ophthalmology - Medical Specialty Society

Source(s) of Funding

American Academy of Ophthalmology

Guideline Committee

Cataract and Anterior Segment Panel; Preferred Practice Patterns Committee

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Financial Disclosures/Conflicts of Interest

In compliance with the Council of Medical Specialty Societies' Code for Interactions with Companies (available at

www.cmss.org/codeforinteractions.aspx (), relevant relationships with industry are listed. A majority (56%) of the participants had no financial relationship to disclose. The Academy has Relationship with Industry Procedures to comply with the Code (available at <http://one.aao.org/CE/PracticeGuidelines/PPP.aspx> ()).

Maria M. Aaron, MD: No financial relationships to disclose

Iqbal K. Ahmed, MD: Abbott Medical Optics – Lecture fees; Alcon Laboratories, Inc. – Consultant/Advisor, Lecture fees; Allergan, Inc. – Consultant/Advisor, Lecture fees; AqueSys – Consultant/Advisor; Carl Zeiss Meditec – Consultant/Advisor, Lecture fees; Endo Optiks, Inc. – Consultant/Advisor; ForSight Labs – Consultant/Advisor; Glaukos Corp. – Consultant/Advisor; iScience – Consultant/Advisor, Lecture fees; Ivantis – Consultant/Advisor; New World Medical, Inc. – Lecture fees; Transcend Medical – Consultant/Advisor

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Louis D. Nichamin, MD: Abbott Medical Optics – Consultant/Advisor; Allergan, Inc. – Consultant/Advisor; Bausch & Lomb Surgical – Consultant/Advisor; Eyeonics, Inc. – Consultant/Advisor; Glaukos Corp. – Consultant/Advisor; iScience – Consultant/Advisor, Equity owner; LensAR – Consultant/Advisor, Equity owner; PowerVision – Consultant/Advisor, Equity owner; RevitalVision, LLC – Consultant/Advisor, Equity owner; WaveTec Vision System – Consultant/Advisor, Equity owner

Thomas A. Oetting, MD: No financial relationships to disclose

Randall J. Olson, MD: Abbott Medical Optics – Consultant/Advisor, Lecture fees; Allergan, Inc. – Consultant/Advisor, Lecture fees; BD Medical – Ophthalmic Systems – Consultant/Advisor

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Guideline Status

This is the current release of the guideline.

This guideline updates a previous version: Cataract in the adult eye. Preferred practice pattern. In: American Academy of Ophthalmology (AAO). San Francisco (CA): American Academy of Ophthalmology (AAO); 2006. p. 69. [585 references]

All Preferred Practice Patterns are reviewed by their parent panel annually or earlier if developments warrant and updated accordingly. To ensure that all Preferred Practice Patterns are current, each is valid for 5 years from the "approved by" date unless superseded by a revision.

Guideline Availability

Electronic copies: Available from the [American Academy of Ophthalmology \(AAO\) Web site](http://www.aao.org) .

Print copies: Available from American Academy of Ophthalmology, P.O. Box 7424, San Francisco, CA 94120-7424; Phone, (415) 561-8540.

Availability of Companion Documents

The following is available:

- Cataract summary benchmarks for Preferred Practice Patterns guidelines. San Francisco (CA): American Academy of Ophthalmology; 2011 Oct. 2 p. Electronic copies: Available in Portable Document Format (PDF) from the [American Academy of Ophthalmology \(AAO\) Web site](#) . Also available in a variety of foreign languages from the [AAO Web site](#) .

Print copies: Available from American Academy of Ophthalmology, P.O. Box 7424, San Francisco, CA 94120-7424; Phone, (415) 561-8540.

In addition, the [appendices](#) to the original guideline document contain various resources, including the Wrong Site Wrong IOL surgery checklist.

Patient Resources

The following is available:

- What is cataract? Electronic copies: Available from the [American Academy of Ophthalmology \(AAO\) Web site](#) . Also available in Spanish from the [AAO Web site](#) .

Print copies: Available from American Academy of Ophthalmology, P.O. Box 7424, San Francisco, CA 94120-7424; Phone, (415) 561-8540.

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